

Early Engagement in Physical Activity and Exercise Is Key in Managing Cancer Cachexia

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Despite consensus on the diagnosis and staging of cancer anorexia/cachexia syndrome, there is currently no accepted standard of care, and affected patients remain widely undertreated. There is general agreement that, because of the complex pathophysiology involved, management should be multimodal and offered earlier in the course of anticancer treatment.[1] However, clarification is needed regarding how to deliver the appropriate anticachexia and antianorexia therapies. In this issue of ONCOLOGY, Dev et al provide an important step forward, offering a model for the multimodal management of cachexia that includes core treatments, as well as evidence-based and investigational approaches, and that details how these target different aspects of the syndrome.[2] Acknowledging the limited data available on some of the treatments discussed, the authors also provide valuable clinical practice points to guide the delivery of cancer care. We wish to draw further attention to the role of physical activity and exercise, which they propose as core treatments.

Physical activity can be defined as “any bodily movement, produced by skeletal muscles, that increases energy expenditure above resting levels,” and includes domestic, occupational, leisure, or other activities.[3] Exercise is a subset of physical activity in that it meets the previously described definition, but it involves “structured, repetitive, and planned movement undertaken to improve or maintain one or more components of physical fitness.”[3] The terms are often used interchangeably; however, for purposes of research, treatments should be correctly defined and described. In the clinical setting, the language used to describe treatments can influence health professional and patient engagement; thus, it can at times be helpful to refer to an exercise program as “physical activity” or by a description of its content, such as a “walking group.”

A strong theoretical rationale and consistent laboratory data reported in the medical literature underscore the role of physical activity and exercise in cachexia management. These behavioral modifications should be applied soon after the diagnosis of cancer, not only by people at risk for cachexia but also those with any sign of metabolic disturbance. Early on in the disease process, patients are generally likely to be less symptomatic, have less impairment, and retain an ability to increase muscle mass (ie, have “anabolic potential.”)[4] In patients with early-stage cancer, the cumulative effect of cachexia, comorbidities, and physical inactivity is also less likely to have precipitated a refractory state, in which treatment options are limited.[5]

Exercise is probably superior to physical activity for addressing weakness and exercise intolerance caused by cancer cachexia, since it provides a greater stimulus, better able to provoke a training response in the muscular, cardiovascular, and respiratory systems. Resistance training, with fixed or free weights, should be selected primarily to facilitate muscular improvements, whereas endurance training—for example, using stationary cycling—should be selected to enhance aerobic fitness.[5,6] One challenge of cachexia is that it can be difficult to identify the primary target for training, given that patients commonly present with both muscle weakness and exercise intolerance. Thus, patient preference may help guide the type of exercise offered. For example, patients with exertional breathlessness often express a preference for resistance training because of its low cardiorespiratory demand.[7]

While a strong evidence base supports exercise training in people with early-stage cancer,[8] relatively few studies have examined its use in advanced disease,[9] and there are no controlled trials including patients with any degree of confirmed cachexia.[10] Exercise programs can also be physically demanding, as reflected in the low rates of uptake and completion reported in clinical studies.[11] Even when “light” programs are offered, patients and health professionals frequently report that patients are “too busy” to engage in treatments they may perceive to be “unnecessary”

or “burdensome.”[12,13]

A focus on physical activity has the advantage of directly targeting the patient’s lived experience of cachexia, which is often typified by a reduced ability to perform daily tasks and activities, as well as reduced participation in work, social life, and society.[14] Supporting continued or renewed participation may bring meaningful outcomes as patients prioritize their independence in self-care, domestic, and leisure activities.[15] This may also be achieved in the short term, with improvements in task performance sometimes occurring before changes in body composition.

However, it is important to recognize that, for most people, engaging in physical activity and exercise treatments demands a change in behavior. Tools such as the “capability, opportunity, motivation, and behavior” (COM-B) model from the Behaviour Change Wheel created by Michie et al, provide a framework for supporting people in undertaking physical activity and/or exercise.[16] The first step in a behavior change approach is to inform patients, families, and other health professionals of the possible benefits of having patients maintain or increase their levels of physical activity; where possible, patients should be directly encouraged to participate in an activity of particular interest to them. Any concerns that could limit patient engagement, such as fear of exertional symptoms, or the restricting of domestic tasks by a family member to “protect the patient,” should be identified, explored, and challenged in a sensitive manner by the healthcare provider. Patients’ positive health beliefs and behaviors should also be reinforced and augmented. Techniques may include goal setting, action planning, or graded activity, each tailored to the individual patient’s circumstances but with the common aim of maximizing participation in daily life.[17] Plans should be in place to help patients continue positive behaviors when faced with obstacles. For example, if inclement weather prevents outdoor walking, then indoor exercises can be completed; such workaround strategies can also help patients adjust to the challenges presented by cancer and its treatment.[18]

Behavior change approaches are unlikely to reverse cachexia-related impairments, but they should elevate the patient’s activity and participation levels, and contribute to an improved quality of life as part of a multimodal treatment strategy.[19] In a recent trial, behavior change techniques were used to implement exercise and lifestyle-modification programs for patients with head and neck cancer who were undergoing radiotherapy.[20] Despite declining total body lean and fat mass, suggesting progressive cachexia, some patients were able to improve their physical activity levels and build functional capacity both during and after cancer treatment. The skills required to deliver physical activity and exercise treatments are already present in settings where rehabilitation professionals are integrated within clinical service teams.[21] When such expertise is not readily available, techniques that focus on behavior change may offer a useful starting point to help patients to live fully in the face of cancer cachexia.

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